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Rubber World

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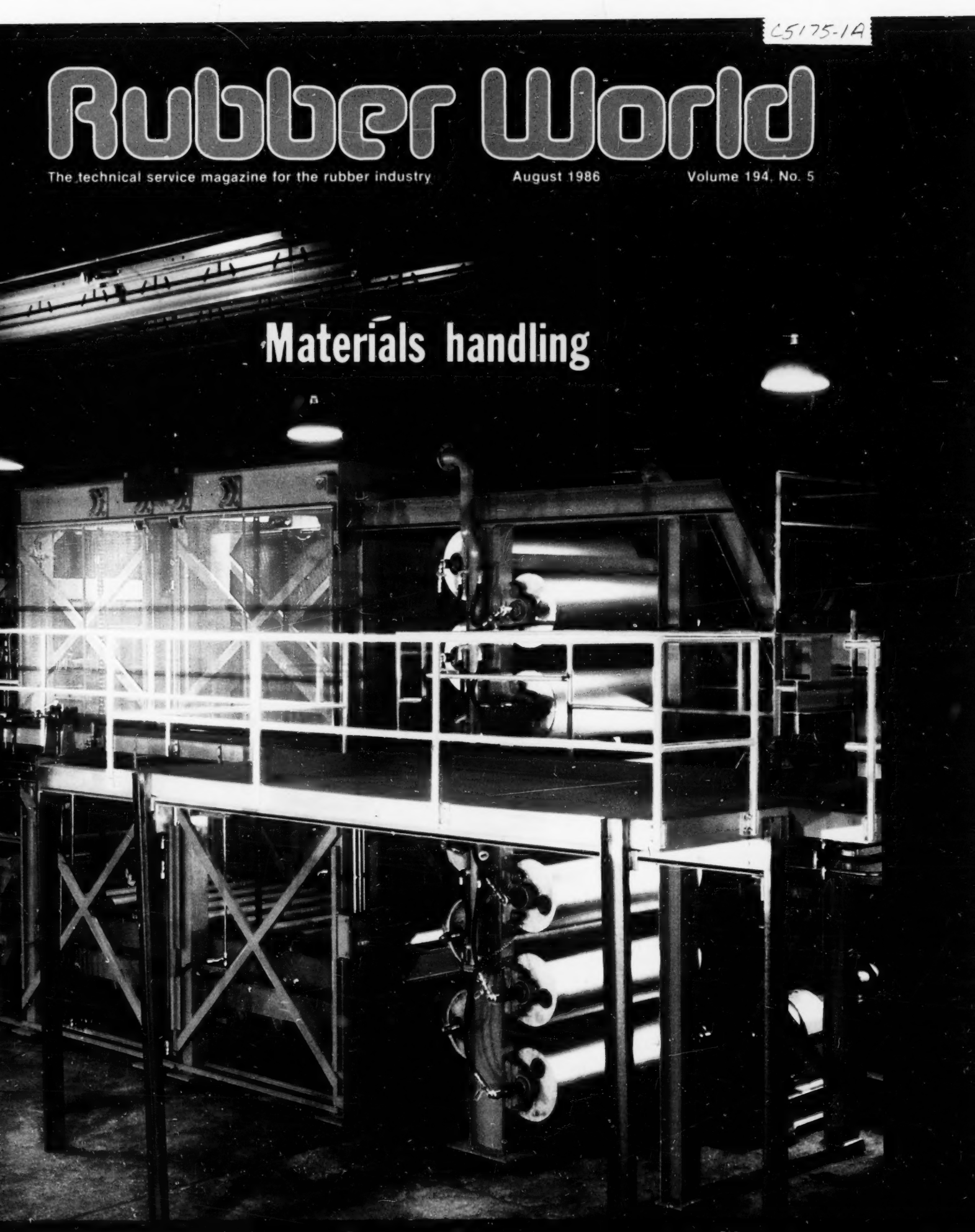
Materials handling



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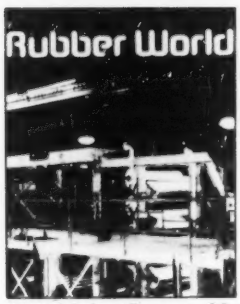

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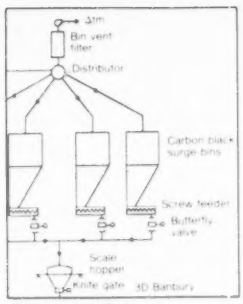

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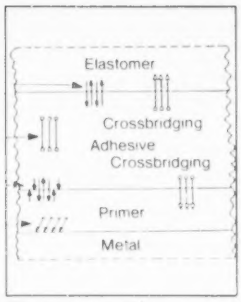

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by Jon Menough, contributing technical service editor. Cork is an engineering material with a number of unique and intriguing properties and is often overlooked by rubber compounders in applications where it would provide significant benefits.

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by David Crosby, Crosby & Co. A look at the reasons why supplier-supplied quality is such a problem to many.

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by Bill Stahr, Brad & Associates. The uses of sprayable urethane are virtually unlimited but it is not the panacea for all applications. A look at what is to be considered for this type of process.

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by Ron Cain and Jim Hawk, ACC Automation. Article discusses general materials handling and reviews unique application solutions that can be accomplished by piecing together standard components that are in every day use in plants.

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by Vincent A. DeLuca, Jr., Jones & Ross, Inc. Author looks at the rationale for choosing a dense phase carbon black conveying system when automating a rubber mixing facility.

29 Effect of compounding ingredients on elastomer to metal adhesion
by M.A. Weih, C.E. Siverling and F.H. Sexsmith, Lord Corporation. This article discusses the relationship between compounding ingredients and post-vulcanization adhesion, in particular, carbon black type and level, and the cure system in natural rubber bonded to phosphatized steel.

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Cover photo courtesy of ACC Automation

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Business Briefs

Acquisitions, expansions

Monsanto is building a plant in Brazil for its thermoplastic rubber and elastomer compounds and is building another in Japan as part of a joint venture with **Mitsubishi Chemical**. Both facilities will start up in mid 1987 and bring the company's capacity to near 100 million pounds for its Santoprene and Geolast lines.

Amoco Chemicals has acquired the engineering polymers and advanced composites businesses of **Union Carbide**. The product lines include Udel polysulfone, Midel engineering resins, Radel polyarylsulfone, Ardel polyarylate, Kadel polyketone and Thornel carbon fibers and advanced composite systems. Included in the business units is an engineering polymers plant in Marietta, OH and a composites operation in Greenville, SC.

Morenci Engineered Rubber Products has opened a 25,000 sq. ft. plant in Kendallville, IN to produce injection molded rubber components primarily for the auto industry that will employ 60-80 persons when fully operational.

Fluorocarbon Co., Laguna Nigel, CA acquired the rubber bearing pad business of **Oil States Industries**, Athens, TX for approximately $3 million.

Buckhorn, Inc. is adding nearly $1 million worth of injection molding equipment at its Hannibal, MO plant that will eventually produce thermoplastic original equipment parts for commercial vehicles.

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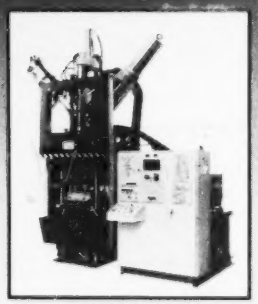

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Chem-Trend is constructing a three-building complex in Howell, MI which will include an administration building, a laboratory and a 25,000 sq. ft. production facility that will be used to manufacture most of its release agents.

Sterling Tire, Tuscumbia, AL purchased **Bearcat International Tire**, Dublin, Ireland and both companies will operate as divisions of the newly formed First Tire Inc. First Tire will produce and market all types of industrial tires.

Exxon Chemical Americas has started up an expansion of its neo acids facilities at its Baton Rouge, LA site. The expanded plant will continue to produce neo-pentanoic and neo-decanoic acids and will produce two new grades, neo-heptanoic and neo-nonanoic acids.

Dura Commodities, Harrison, NY, the U.S. affiliate of Astor Chemical has changed its name to Astor Wax Corp. **Astor Chemical** acquired **Trans Penn Wax**, Titusville, PA.

Technet, an engineering consulting firm specializing in rubber and plastic extrusion solutions has been formed in Needham, MA. It will provide contract engineering services for the wire and cable and fiberoptic industries.

QO Chemicals has completed the first half of a two-phase plant expansion at its Memphis, TN polytetramethylene ether glycol facility increasing production capacity by 20% that will be expanded a total of 40% by January.

Teknor Apex, Pawtucket, RI purchased **RPC, Inc.**, Harbor City, CA a manufacturer of colorants and specialty compounds.

Flexel, Atlanta, GA has acquired the cellophane business and the Tecumseh, KS plant from **Du Pont**.

Carlisle Companies has agreed to buy **Data Electronics**, San Diego, CA a manufacturer of magnetic tape data cartridges and other data communications products.

Liquid Carbonic is building a 600-ton/day air separation plant in Stockertown, PA to begin operation in the fourth quarter of 1987.

Magnesium Elektron Ltd. recently commissioned a new zirconium chemicals solutions plant at Swinton,

RMA tire shipments & production report through May 1986 (figures in thousands of units)

Passenger Tires	YTD 1986	YTD 1985	% Change
Shipments			
Original Equipment	24,194	24,383	−78
Radial	20,251	20,291	−2
Replacement	54,376	55,119	−1.35
Radial	46,471	44,392	4.68
Export	1,617	2,509	−35.55
Radial	1,237	2,030	−39.06
Total	80,187	82,011	−2.22
Radial	67,959	66,713	1.87
Production	67,038	73,168	−8.38
Radial	59,597	58,049	2.67
Truck & Bus Tires			
Shipments			
Original Equipment	3,037	3,386	−10.31
Radial	2,013	2,152	−6.46
Replacement	12,022	12,166	−1.18
Radial	5,646	5,056	11.67
Total	15,638	16,151	−3.18
Radial	8,020	7,525	6.58
Production	13,240	15,462	−14.37
Radial	6,370	6,690	−4.78

with sales totalling $38 million.

Polysar reported 1985 sales of 1.8 billion with net income of $122,000.

Markets, news

Worldwide demand for rubber will grow at a faster pace than tire supply because of the large gains expected in nontire rubber demand, especially in newly industrializing countries, a study by The Freedonia Group projects. *World Rubber and Tire Markets* sees sizable gains for hose, belting, medical disposables and a multitude of industrial and consumer products made from rubber. Nontire rubber demand in the developed countries of North America, Western Europe and Japan will only marginally expand, due to market saturation, the increased substitution of rubber by plastics in many applications and the gradual shift in the manufacture of these fabricated rubber goods to developing countries such as those in Latin America. The gradual shift in tire supply to these developing countries will further push rubber demand in this direction. By 1989, world rubber demand will reach 15 million metric tons, reflecting an average 2.8% increase over 1984 the TFG report says.

Researchers at Texas A & M university have discovered that cold temperatures increase rubber production in guayule. Using an electron microscope and advanced nuclear magnetic resonance technology, the scientists analyzed guayule plants grown at Fort Stockton and their analysis indicates the average rubber content per plant increases by about one-fifth of an ounce between August and January. They've also found that the rubber transferase, the enzyme responsible for synthesizing rubber in the plant increased by 50 times from November to January. "Guayule plants apparently need hot, dry summers to produce large amounts of biomass and cold winters to convert stored carbohydrates in the stem into rubber," Dr. Chauncey Benedict said. Discovering that the enzyme is genetically regulated by cold temperatures means that scientists may be able to use chemical regulators to turn on the gene coding for the enzyme synthesis during summer, Benedict said.

World rubber demand (000 metric tons)

	1984	1989	1995	ann. growth
Rubber Demand	13136.9	15064	17800	2.8
natural	4278.2	4929	5830	2.9
synthetic	8858.7	10135	11970	2.7
tire	5921.5	6214	6696	1.3
nontire	7315.4	8850	11104	3.9
United States	2811.8	2995	3290	1.3
USSR	2156.0	2445	2760	2.6
Japan	1440.0	1620	1880	2.4
W. Germany	588.0	635	685	1.6

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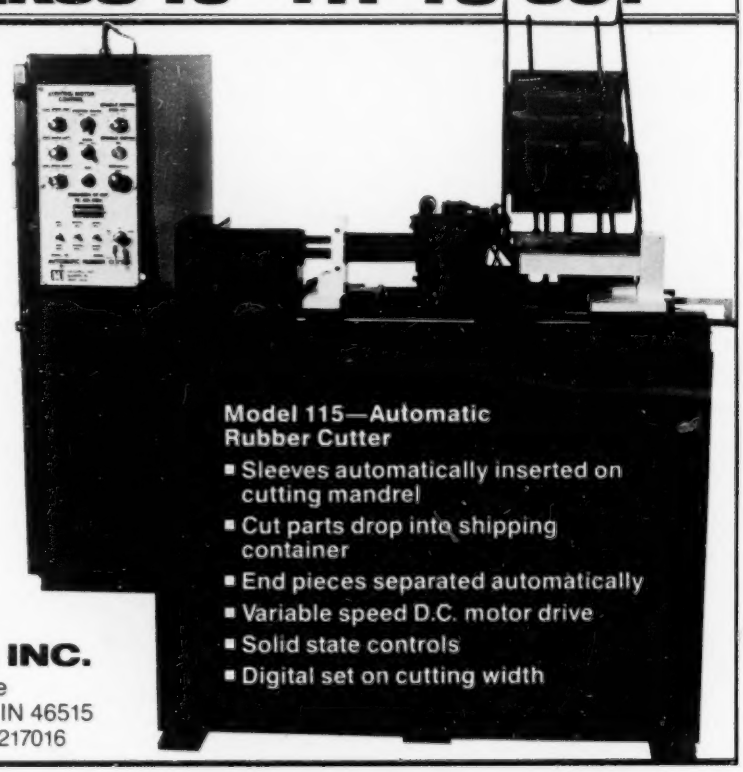

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